GenCore version 4.5

OM protein - protein search, using sw model

Run on: March 1, 2001, 16:18:27 ; Search time 64.32 Seconds
(without alignments)
11.164 Million cell updates/sec

Title: US-09-331-631A-38
Perfect score: 53
Sequence: 1 CXXXCXXXXXXXXXXCXXXC 21

Scoring table: BLOSUM62DX
Gapop 10.0 , Gapext 0.5

Searched: 268485 seqs, 34193795 residues

Total number of hits satisfying chosen parameters: 268485

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_36:*
1: /SIDS1/gcgdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS1/gcgdata/geneseq/geneseqp/AA1981.DAT:*
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21: /SIDS1/gcgdata/geneseq/geneseqp/AA2000.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	53	100.0	31	21	Y70731	Wnt antagonist pro
2	53	100.0	40	12	R11372	Exon II encoded by
3	53	100.0	49	17	W02648	Mutant disintegrin
4	53	100.0	57	21	Y57813	Crab metallothione
5	53	100.0	57	21	Y76185	Human secreted pro
6	53	100.0	58	20	Y30433	Mature nematode ex
7	53	100.0	61	20	Y30434	Mature nematode ex
8	53	100.0	70	11	R05622	AaIt insect -selec
9	53	100.0	70	12	R11173	Deduced sequence o
10	53	100.0	70	15	R56468	AaIT encoded by co
11	53	100.0	70	15	R56469	AaIT encoded by na
12	53	100.0	70	15	R57967	AaIT encoded by th
13	53	100.0	70	19	W48669	Androctonus austra
14	53	100.0	71	12	R12378	AaIT scorpion toxi
15	53	100.0	73	12	R10870	Exon I encoded by
16	53	100.0	76	17	R91703	HpoNAP5. Heligomo
17	53	100.0	76	17	W05263	Hawksbill turtle s
18	53	100.0	76	20	Y30389	Nematode extracted
19	53	100.0	76	20	Y30403	Nematode extracted
20	53	100.0	77	17	W05265	Hawksbill turtle s
21	53	100.0	77	18	W36518	Tortoise shell str
22	53	100.0	79	17	R91704	NamNAP. Necator a
23	53	100.0	79	20	Y30412	Nematode extracted
24	53	100.0	79	21	Y64946	Human 5' EST relat
25	53	100.0	86	16	R64267	Androctonus austra
26	53	100.0	89	12	R11174	SP-IT fusion prote
27	53	100.0	89	13	R25469	pCIB4223. Synthet
28	53	100.0	89	21	Y44584	M. sexta ADK signa
29	53	100.0	98	21	Y65429	Human 5' EST relat
30	53	100.0	107	21	Y65657	C. elegans insulin
31	53	100.0	109	17	R84086	T-lymphocyte stimu
32	53	100.0	110	21	Y44986	Human epidermal pr
33	53	100.0	111	13	R26050	MSF-K130. Synthet
34	53	100.0	115	20	Y22170	Drosophila Acp62F
35	53	100.0	124	19	W56732	Nucellus specific
36	53	100.0	135	21	Y91429	Human secreted pro
37	53	100.0	138	13	R26820	CA455 protein. Ze
38	53	100.0	149	8	P70057	Human insulin rece
39	53	100.0	169	20	Y60558	Human normal bladd
40	53	100.0	182	12	R10872	Protein encoded by
41	53	100.0	246	19	W53007	Mus musculus I-mfa
42	53	100.0	252	18	W15773	Protein cognate of
43	53	100.0	257	17	W05502	HCMV Toledo strain
44	53	100.0	285	9	P82114	Peptide corresp. t
45	53	100.0	369	11	R05637	Placenta-specific

ALIGNMENTS

RESULT 1
Y70731
ID Y70731 standard; protein; 31 AA.
XX
AC Y70731;
XX
DT 24-JUL-2000 (first entry)
XX
DE Wnt antagonist protein consensus sequence-1.
XX
KW Wnt antagonist; contraceptive; contraceptive vaccine; oocyte development;
KW female primate contraception; oocyte viability.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT Misc-difference 2
FT /label= Unknown
FT /note= "Xaa may be 9 amino acids in length; some
FT amino acids may be absent"
FT Misc-difference 4
FT /label= Unknown
FT /note= "Xaa may be 42 amino acids in length; some
FT amino acids may be absent"
FT Misc-difference 14
FT /label= Unknown
FT Misc-difference 15
FT /label= Unknown
FT Misc-difference 16
FT /label= Unknown
FT Misc-difference 17
FT /label= Unknown
FT Misc-difference 18
FT /label= Unknown
FT Misc-difference 19

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FT                  /label= Unknown
FT   Misc-difference 21
FT                  /label= Unknown
FT                  /note= "Xaa may be 10 amino acids in length; some
FT                  amino acids may be absent"
FT   Misc-difference 23
FT                  /label= Unknown
FT   Misc-difference 24
FT                  /label= Unknown
FT   Misc-difference 25
FT                  /label= Unknown
FT   Misc-difference 27
FT                  /label= Unknown
FT                  /note= "Xaa may be 7 amino acids in length; some
FT                  amino acids may be absent"
FT   Misc-difference 29
FT                  /label= Unknown
FT                  /note= "Xaa may be 27 amino acids in length; some
FT                  amino acids may be absent"
FT   Misc-difference 31
FT                  /label= Unknown
FT                  /note= "Xaa may be 13 amino acids in length; some
FT                  amino acids may be absent"
XX
PN   WO200021555-A1.
XX
PD   20-APR-2000.
XX
PF   13-OCT-1999;   99WO-US23640.
XX
PR   15-OCT-1998;   98US-0104355.
XX
PA   (HARD ) HARVARD COLLEGE.
XX
PI   Mcmahon AP,  Parr BA,  Vaino S;
XX
DR   WPI; 2000-317845/27.
XX
PT   Contraceptive composition for inhibiting oocyte development in a female
PT   primate comprises a Wnt polypeptide antagonist  -
XX
PS   Claim 12; Page 44; 57pp; English.
XX
CC   The patent discloses a method of female primate contraception comprising
CC   administering an antagonist of a Wnt polypeptide, inhibiting oocyte
CC   development. Wnt polypeptides are useful for promotive maturation of an
CC   immature oocyte. Wnt polypeptides are also useful for increasing the
CC   number of mature oocytes and to enhance oocyte viability. The present
CC   peptide is a consensus sequence of Wnt antagonist which inhibits the
CC   physiological activity of a Wnt polypeptide. Antagonistic polypeptides
CC   may contain a cysteine-rich domain.
XX
SQ   Sequence   31 AA;


  Query Match             100.0%;  Score 53;  DB 21;  Length 31;
  Best Local Similarity   66.7%;  Pred. No. 1.1e+02;
  Matches   14;  Conservative    7;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXXCXXXC 21
          |:::|:::|||||||:||||||
Db      6 ccccccccxxxxxxcxcxxxc 26


RESULT   2
R11372
ID   R11372 standard; Protein; 40 AA.
XX
AC   R11372;
XX
DT   08-MAY-1991  (first entry)
XX
DE   Exon II encoded by genomic meg-CSF clone.
XX
KW   Megakaryocyte colony stimulating factor; platelet deficiency;
KW   bleeding disorder.
XX
OS   Homo sapiens.
XX
PN   WO9102001-A.
XX
PD   21-FEB-1991.
XX
PF   07-AUG-1990;   90WO-US04421.
XX
PR   29-JUN-1990;   90US-0546114.
PR   08-AUG-1989;   89US-0390901.
PR   28-DEC-1989;   89US-0457196.
XX
PA   (GENE-) GENETICS INST INC.
XX
PI   Gesner TG,  Clark SC,  Turner K,  Hewick RM;
XX
DR   WPI; 1991-073490/10.
DR   N-PSDB; Q10580.
XX
PT   New mega:karyocyte colony stimulating factor protein - regulates
PT   human haematopoiesis by stimulating growth and development of
PT   mega:karyocyte(s) in treatment of e.g. plastic anaemia
XX
PS   Claim 3; Page 85; 204pp; English.
XX
CC   The clone was isolated from a human placenta lambda phage DNA
CC   library. The sequence can be inserted into expression vectors for
CC   the prodn. of recombinant meg-CSF.  The protein is used to treat
CC   bleeding disorders and platelet deficiencies.
CC   See also R10870, R10871 and R10872.
XX
SQ   Sequence   40 AA;


  Query Match             100.0%;  Score 53;  DB 12;  Length 40;
  Best Local Similarity   19.0%;  Pred. No. 1.4e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXXCXXXC 21
          |:::|:::::::::::|:::|
Db      4 ckgrcfesfergrecdcdaqc 24


RESULT   3
W02648
ID   W02648 standard; peptide; 49 AA.
XX
AC   W02648;
XX
DT   23-OCT-1996  (first entry)
XX
DE   Mutant disintegrin amino acid sequence.
XX
KW   Wild type; RGD motif; ecstatin; disintegrin; binding activity.
XX
OS   Synthetic.
XX
FH   Key             Location/Qualifiers
FT   Domain          24..26
FT                   /note= "RGD domain"
XX
PN   JP08157496-A.
XX
PD   18-JUN-1996.
XX
PF   30-NOV-1994;   94JP-0296474.
XX
PR   30-NOV-1994;   94JP-0296474.
XX
```

```
PA   (TANP-) TANPAKU KOGAKU KENKYUSHO KK.
XX
DR   WPI; 1996-339190/34.
XX
PT   A mutant disintegrin - contg. Cys residues flanking the RGD
PT   functional site to cyclise it
XX
PS   Disclosure; Fig 1; 6pp; Japanese.
XX
CC   This is the amino acid sequence of a mutated sequence surrounding the
CC   RGD peptide motif in ecstatin, a member of the disintegrin family. The
CC   amino acids immediately flanking the RGD motif were mutated to Cys
CC   residues in order to circularise the RGD motif.  The peptides were
CC   synthesised using a peptide synthesiser and their integrin binding
CC   activities determined and compared.
XX
SQ   Sequence   49 AA;


  Query Match             100.0%;  Score 53;  DB 17;  Length 49;
  Best Local Similarity   19.0%;  Pred. No. 1.6e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXXXCXXXC 21
          |:::|:::::::::::::|:::|
Db      7 ccrnckflkegtickrcrgdc 27


RESULT   4
Y57813
ID   Y57813 standard; protein; 57 AA.
XX
AC   Y57813;
XX
DT   22-MAR-2000  (first entry)
XX
DE   Crab metallothionein Class I amino acid sequence.
XX
KW   Metallothionein; metal recovery; remediation; heavy metal;
KW   precious metal; phytochelatin; green algae; Chlamydomonas reinhardtii.
XX
OS   Eubrachyura.
XX
PN   WO9960838-A1.
XX
PD   02-DEC-1999.
XX
PF   28-MAY-1999;   99WO-US12007.
XX
PR   28-MAY-1998;   98US-0087374.
XX
PA   (OHIS ) UNIV OHIO STATE RES FOUND.
XX
PI   Sayre RT,  Traina SJ;
XX
DR   WPI; 2000-086646/07.
XX
PT   Novel method for metal recovery, remediation and separation  -
XX
PS   Disclosure; Page 6; 86pp; English.
XX
CC   The present invention describes a transgenic algal cell (I) of the
CC   genus Chlamydomonas comprising reproductive genetic material comprising
CC   a nucleotide sequence capable of expressing chicken type I
CC   Metallothionein. Also described is a method of removing metal from
CC   an aqueous medium containing at least one dissolved or suspended
CC   metal. The transgenic algae are used for the selective separation of
CC   metals, particularly the separation of precious and desirable metals
CC   such as gold and uranium, from other metals such as cadmium, zinc and
CC   copper. The method can be used to facilitate the selective recovery of
CC   precious and rare metals from mineral sources where aqueous media can
CC   be used, such as in natural surface water flows, ground water and where
CC   water may be introduced. The method is suitable for well-drilling,
CC   soil and water remediation arts, mining fields, and industrial
CC   engineering. The present sequence represents a Class I metallothionein
CC   given in the present invention.
XX
SQ   Sequence   57 AA;


  Query Match             100.0%;  Score 53;  DB 21;  Length 57;
  Best Local Similarity   19.0%;  Pred. No. 1.8e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXXXCXXXC 21
          |:::|:::::::::::::|:::|
Db     33 cssgckcankegcrktcskpc 53


RESULT   5
Y76185
ID   Y76185 standard; Protein; 57 AA.
XX
AC   Y76185;
XX
DT   23-MAR-2000  (first entry)
XX
DE   Human secreted protein encoded by gene 62.
XX
KW   Human; secreted protein; cancer; tumour; developmental abnormality;
KW   foetal deficiency; blood disorder; immune system disorder; inflammation;
KW   autoimmune disease; allergy; Alzheimer's disease; cognitive disorder;
KW   schizophrenia; arthritis; asthma; psoriasis; sepsis; skin disorder;
KW   atherosclerosis; diabetes; cardiovascular disorder; kidney disorder;
KW   digestive disorder; endocrine disorder; infection; AIDS; leukaemia;
KW   therapy.
XX
OS   Homo sapiens.
XX
PN   WO9958660-A1.
XX
PD   18-NOV-1999.
XX
PF   06-MAY-1999;   99WO-US09847.
XX
PR   12-MAY-1998;   98US-0085093.
PR   12-MAY-1998;   98US-0085094.
PR   12-MAY-1998;   98US-0085105.
PR   12-MAY-1998;   98US-0085180.
PR   18-MAY-1998;   98US-0085906.
PR   18-MAY-1998;   98US-0085920.
PR   18-MAY-1998;   98US-0085921.
PR   18-MAY-1998;   98US-0085922.
PR   18-MAY-1998;   98US-0085923.
PR   18-MAY-1998;   98US-0085924.
PR   18-MAY-1998;   98US-0085928.
PR   18-MAY-1998;   98US-0085925.
PR   18-MAY-1998;   98US-0085927.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Ruben SM,  Florence K,  Ni J,  Rosen CA,  Carter KC,  Moore PA;
PI   Olsen HS,  Shi Y,  Young PE,  Wei F,  Brewer LA,  Soppet DR;
PI   Lafleur DW,  Endress GA,  Ebner R;
XX
DR   WPI; 2000-062296/05.
DR   N-PSDB; Z65311.
XX
PT   New isolated human genes and the secreted polypeptides they encode,
PT   useful for diagnosis and treatment of e.g. cancers, neurological
PT   disorders, immune diseases, inflammation or blood disorders  -
XX
PS   Claim 11; Page 398; 475pp; English.
XX
CC   Z65250 to Z65350 represent 97 isolated human secreted protein genes.
CC   Y76124 to Y76223 represent the secreted proteins encoded by the 97 human
```

CC genes. The genes and their corresponding secreted polypeptides are
CC useful for preventing, treating or ameliorating medical conditions,
CC e.g. by protein or gene therapy. Also pathological conditions can be
CC diagnosed by determining the amount of the new polypeptides in a sample
CC or by determining the presence of mutations in the new genes. Specific
CC uses are described for each of the 97 genes, based on which tissues they
CC are most highly expressed in, and include developing products for the
CC diagnosis or treatment of cancer, tumours, developmental abnormalities
CC and foetal deficiencies, blood disorders, diseases of the immune system,
CC autoimmune diseases, inflammation, allergies, Alzheimer's and cognitive
CC disorders, schizophrenia, arthritis, asthma, psoriasis, sepsis, skin
CC disorders, atherosclerosis, diabetes, cardiovascular disorders, kidney
CC disorders, digestive/endocrine disorders, infections and AIDS. The
CC polypeptides are also useful for identifying their binding partners.
CC The sequences shown in Y76224 to Y76424 represent fragments of the
CC secreted proteins.
XX
SQ Sequence 57 AA;

Query Match 100.0%; Score 53; DB 21; Length 57;
Best Local Similarity 19.0%; Pred. No. 1.8e+02;
Matches 4; Conservative 17; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXXCXXXC 21
|:::|:::::::::::|:::|
Db 6 clfhcsiclffmlvpycfdyc 26

RESULT 6
Y30433
ID Y30433 standard; Protein; 58 AA.
XX
AC Y30433;
XX
DT 15-NOV-1999 (first entry)
XX
DE Mature nematode extracted anticoagulant protein HpoNAP5.
XX
KW Nematode extracted anticoagulant protein; NAP; anticoagulant;
KW serine protease inhibitor; NAP domain; factor VIIa/TF.
XX
OS Heligmosomoides polygyrus.
XX
PN US5955294-A.
XX
PD 21-SEP-1999.
XX
PF 19-APR-1996; 96US-0634641.
XX
PR 19-APR-1996; 96US-0634641.
PR 18-OCT-1994; 94US-0326110.
PR 05-JUN-1995; 95US-0461965.
PR 05-JUN-1995; 95US-0465380.
PR 05-JUN-1995; 95US-0486397.
PR 05-JUN-1995; 95US-0486399.
PR 17-OCT-1995; 95WO-US13231.
XX
PA (CORV-) CORVAS INT INC.
XX
PI Bergum PW, Gansemans YGJ, Jespers LS, Laroche YR;
PI Lauwereys MJ, Messens JHL, Moyle M, Stanssens PEH;
PI Vlasuk GP;
XX
DR WPI; 1999-539569/45.
XX
PT Screening an isolated protein for Nematode-extracted Anticoagulant
PT Protein domains
XX
PS Disclosure; Columns 143-144; 197pp; English.
XX
CC The present sequence represents a nematode extracted anticoagulant
CC protein (NAP). The protein has activity as an anticoagulant and/or serine
CC protease inhibitor. The protein contains at least one NAP domain which
CC has selective inhibitory activity for factor VIIa/TF. The specification
CC describes a method for screening an isolated protein at least one domain
CC for factor VIIa/TF selective inhibitory activity. The method comprises
CC determining the time to clotting effected by a concentration of the
CC isolated protein in an ex vivo prothrombin time (PT) assay and an ex vivo
CC activated partial thromboplastin time (aPTT) assay; calculating
CC prolongation of clotting effected by the isolated protein in each of
CC the PT and aPTT assay, with respect to a baseline clotting value for
CC each assay, where prolongation of clotting is calculated as fold
CC elevation of clotting time relative to a baseline clotting value, where
CC a doubling of clotting time is deemed a two-fold elevation; and
CC calculating a PT to aPTT prolongation ratio, where a ratio at least
CC one is indicative of factor VIIa/TF inhibitory activity. The method is
CC useful for determining if a protein has factor VIIa/TF inhibitory
CC activity.
XX
SQ Sequence 58 AA;

Query Match 100.0%; Score 53; DB 20; Length 58;
Best Local Similarity 19.0%; Pred. No. 1.9e+02;
Matches 4; Conservative 17; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXXCXXXC 21
|:::|:::::::::::|:::|
Db 12 cgtpcepkcnepmpdictlnc 32

RESULT 7
Y30434
ID Y30434 standard; Protein; 61 AA.
XX
AC Y30434;
XX
DT 15-NOV-1999 (first entry)
XX
DE Mature nematode extracted anticoagulant protein NamNAP.
XX
KW Nematode extracted anticoagulant protein; NAP; anticoagulant;
KW serine protease inhibitor; NAP domain; factor VIIa/TF.
XX
OS Necator americanus.
XX
PN US5955294-A.
XX
PD 21-SEP-1999.
XX
PF 19-APR-1996; 96US-0634641.
XX
PR 19-APR-1996; 96US-0634641.
PR 18-OCT-1994; 94US-0326110.
PR 05-JUN-1995; 95US-0461965.
PR 05-JUN-1995; 95US-0465380.
PR 05-JUN-1995; 95US-0486397.
PR 05-JUN-1995; 95US-0486399.
PR 17-OCT-1995; 95WO-US13231.
XX
PA (CORV-) CORVAS INT INC.
XX
PI Bergum PW, Gansemans YGJ, Jespers LS, Laroche YR;
PI Lauwereys MJ, Messens JHL, Moyle M, Stanssens PEH;
PI Vlasuk GP;
XX
DR WPI; 1999-539569/45.
XX
PT Screening an isolated protein for Nematode-extracted Anticoagulant
PT Protein domains
XX
PS Disclosure; Columns 143-144; 197pp; English.
XX
CC The present sequence represents a nematode extracted anticoagulant
CC protein (NAP). The protein has activity as an anticoagulant and/or serine

```
CC   protease inhibitor. The protein contains at least one NAP domain which
CC   has selective inhibitory activity for factor VIIa/TF. The specification
CC   describes a method for screening an isolated protein at least one domain
CC   for factor VIIa/TF selective inhibitory activity. The method comprises
CC   determining the time to clotting effected by a concentration of the
CC   isolated protein in an ex vivo prothrombin time (PT) assay and an ex vivo
CC   activated partial thromboplastin time (aPTT) assay; calculating
CC   prolongation of clotting effected by the isolated protein in each of
CC   the PT and aPTT assay, with respect to a baseline clotting value for
CC   each assay, where prolongation of clotting is calculated as fold
CC   elevation of clotting time relative to a baseline clotting value, where
CC   a doubling of clotting time is deemed a two-fold elevation; and
CC   calculating a PT to aPTT prolongation ratio, where a ratio at least
CC   one is indicative of factor VIIa/TF inhibitory activity. The method is
CC   useful for determining if a protein has factor VIIa/TF inhibitory
CC   activity.
XX
SQ   Sequence   61 AA;


  Query Match            100.0%;  Score 53;  DB 20;  Length 61;
  Best Local Similarity   19.0%;  Pred. No. 1.9e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 21
           |:::|::::::::::::|:::|
Db      13 cgtpcepkcnqpmpdictmnc 33


RESULT   8
R05622
ID   R05622 standard; protein; 70 AA.
XX
AC   R05622;
XX
DT   05-NOV-1990  (first entry)
XX
DE   AaIt insect -selective scorpion toxin.
XX
KW   Insecticidal scorpion toxins;  recombinant DNA; transgenic plants;
KW   toxin AaIT.
XX
OS   Androctonus auatralis.
XX
PN   EP374753-A.
XX
PD   27-JUN-1990.
XX
PF   15-DEC-1989;   89EP-0123226.
XX
PR   19-DEC-1988;   88US-0286087.
XX
PA   (CIBA ) CIBA GEIGY AG.
XX
PI   Zlotkin E,  Eitan M,  Ben-Yehuda O,  Fowler E,  Belagaje RM,  Roberts JL;
XX
DR   WPI; 1990-194964/26.
XX
PT   Recombinant DNA coding for insecticidal toxins - including new
PT   scorpion toxin, and transgenic plants contg. such DNA.
XX
PS   Claim 1; Page 42 ; 53pp; German.
XX
CC   The synthetic AaIT gene was inserted onto the BamHI site of plasmid
CC   pCIB 710, together with the NPT kanamycin-resistance marker.
CC   Maize tissue was tansformed and plants regenerated.
CC   Plants grown from the obtained seeds exhibited increased resistance
CC   to attack by Diabrotica larvae.
CC   The peptide encoded by this DNA and others derived from the Buthinae and
CC   Chatidae scorpion may be used to control various insect pests,
CC   e.g. Sarcophaga, Spodoptera, Locusta, Diabrotica, Leptinotarsa
CC   and/or Heliothis spp.  Transgenic plants containg DNA encoding this
CC   peptide have increased resistance to such pests.
CC   See also R05623.
XX
SQ   Sequence   70 AA;


  Query Match            100.0%;  Score 53;  DB 11;  Length 70;
  Best Local Similarity   19.0%;  Pred. No. 2.2e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 21
           |:::|::::::::::::|:::|
Db      23 cnnqctkvhyadkgyccllsc 43


RESULT   9
R11173
ID   R11173 standard; Protein; 70 AA.
XX
AC   R11173;
XX
DT   24-MAY-1991  (first entry)
XX
DE   Deduced sequence of AaIT.
XX
KW   Insecticide; toxin; scorpion; signal peptide; interleukin 2; IL-2.
XX
OS   Androctonus australis.
XX
PN   EP417906-A.
XX
PD   20-MAR-1991.
XX
PF   10-AUG-1990;   90EP-0308824.
XX
PR   11-AUG-1989;   89US-0392864.
XX
PA   (ELIL ) ELI LILLY & CO.
XX
PI   Lai MH,  Belagaje RM;
XX
DR   WPI; 1991-082139/12.
DR   N-PSDB; Q11011.
XX
PT   Functional, insect toxin prodn. from recombinant eucaryotic cells
PT   - transformed with DNA encoding scorpion toxin and mammalian
PT   signal peptide, useful as insecticide.
XX
PS   Disclosure; Page 27; 61pp; English.
XX
CC   The scorpion neurotoxin gene can be ligated to a signal sequence, esp.
CC   from human IL-2, for the expression of recombinant toxin.  The
CC   protein is selectively toxic towards insects.
CC   See also R11174.
XX
SQ   Sequence   70 AA;


  Query Match            100.0%;  Score 53;  DB 12;  Length 70;
  Best Local Similarity   19.0%;  Pred. No. 2.2e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 21
           |:::|::::::::::::|:::|
Db      23 cnnqctkvhyadkgyccllsc 43


RESULT  10
R56468
ID   R56468 standard; Protein; 70 AA.
XX
AC   R56468;
XX
DT   13-MAR-1995  (first entry)
```

```
XX
DE   AaIT encoded by codon optimised AaIT gene.
XX
KW   Codon optimised; native; B. mori; pBMHPC-12; signal peptide; chorion;
KW   insect controlling protein; toxin; AaIT; baculovirus; AcMNPV; Cry IVD;
KW   expression; secretion; toxin-induced paralysis; cuticle; apolipophorin;
KW   sex-specific; adipokinetic; esterase-6; D. melanogaster; neuropeptide;
KW   M. sexta; enzyme; Pyemotes tritici; B. thuringiensis; diuretic hormone;
KW   eclosion hormone; prothoracicotropic hormone; adipokinetic hormone;
KW   proctolin; juvenile hormone esterase.
XX
OS   Androctonus australis.
XX
PN   EP608696-A.
XX
PD   03-AUG-1994.
XX
PF   10-JAN-1994;   94EP-0100265.
XX
PR   25-JAN-1993;   93US-0009265.
XX
PA   (AMCY ) AMERICAN CYANAMID CO.
XX
PI   Black BC;
XX
DR   WPI; 1994-242108/30.
DR   N-PSDB; Q67698.
XX
PT   Heterologous signal sequences for secretion of insect controlling
PT   proteins - useful to protect plants from insect pests
XX
PS   Disclosure; Page 42; 69pp; English.
XX
CC   The sequences given in R56468-69 are encoded by codon optimised and
CC   native coding sequences for the A. australis insect specific toxin,
CC   AaIT, respectively.  The protein coding sequences may be used with a
CC   DNA sequence encoding a heterologous signal sequence, eg. the D.
CC   melanogaster cuticle signal sequence or the B. mori sex specific signal
CC   sequence (see also Q67685-97).  The fusion sequence may be introduced
CC   into an insect virus, such as the baculovirus AcMNPV.  The insertion of
CC   the AaIT gene and the heterologous signal sequence into a baculovirus
CC   results in the expression and secretion of the toxin.  A susceptible
CC   insect which ingests such a modified baculovirus will cease feeding
CC   on plants due to toxin-induced paralysis at an earlier time than an
CC   insect which ingests a wild-type baculovirus, thus reducing crop
CC   damage.
XX
SQ   Sequence   70 AA;


  Query Match             100.0%;  Score 53;  DB 15;  Length 70;
  Best Local Similarity   19.0%;  Pred. No. 2.2e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 21
           |:::|:::::::::::|:::|
Db      22 cnnectkvhyadkgyccllsc 42


RESULT  11
R56469
ID   R56469 standard; Protein; 70 AA.
XX
AC   R56469;
XX
DT   13-MAR-1995  (first entry)
XX
DE   AaIT encoded by native AaIT gene.
XX
KW   Codon optimised; native; B. mori; pBMHPC-12; signal peptide; chorion;
KW   insect controlling protein; toxin; AaIT; baculovirus; AcMNPV; Cry IVD;
KW   expression; secretion; toxin-induced paralysis; cuticle; apolipophorin;
KW   sex-specific; adipokinetic; esterase-6; D. melanogaster; neuropeptide;
KW   M. sexta; enzyme; Pyemotes tritici; B. thuringiensis; diuretic hormone;
KW   eclosion hormone; prothoracicotropic hormone; adipokinetic hormone;
KW   proctolin; juvenile hormone esterase.
XX
OS   Androctonus australis.
XX
PN   EP608696-A.
XX
PD   03-AUG-1994.
XX
PF   10-JAN-1994;   94EP-0100265.
XX
PR   25-JAN-1993;   93US-0009265.
XX
PA   (AMCY ) AMERICAN CYANAMID CO.
XX
PI   Black BC;
XX
DR   WPI; 1994-242108/30.
DR   N-PSDB; Q67699.
XX
PT   Heterologous signal sequences for secretion of insect controlling
PT   proteins - useful to protect plants from insect pests
XX
PS   Disclosure; Page 43-44; 69pp; English.
XX
CC   The sequences given in R56468-69 are encoded by codon optimised and
CC   native coding sequences for the A. australis insect specific toxin,
CC   AaIT, respectively.  The protein coding sequences may be used with a
CC   DNA sequence encoding a heterologous signal sequence, eg. the D.
CC   melanogaster cuticle signal sequence or the B. mori sex specific signal
CC   sequence (see also Q67685-97).  The fusion sequence may be introduced
CC   into an insect virus, such as the baculovirus AcMNPV.  The insertion of
CC   the AaIT gene and the heterologous signal sequence into a baculovirus
CC   results in the expression and secretion of the toxin.  A susceptible
CC   insect which ingests such a modified baculovirus will cease feeding
CC   on plants due to toxin-induced paralysis at an earlier time than an
CC   insect which ingests a wild-type baculovirus, thus reducing crop
CC   damage.
XX
SQ   Sequence   70 AA;


  Query Match             100.0%;  Score 53;  DB 15;  Length 70;
  Best Local Similarity   19.0%;  Pred. No. 2.2e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 CXXXCXXXXXXXXXXCXXXC 21
           |:::|:::::::::::|:::|
Db      22 cnnectkvhyadkgyccllsc 42


RESULT  12
R57967
ID   R57967 standard; Protein; 70 AA.
XX
AC   R57967;
XX
DT   11-APR-1995  (first entry)
XX
DE   AaIT encoded by the optimised nucleic acid sequence.
XX
KW   Codon optimisation; Androctonus australis; insect; toxin; AaIT;
KW   contractile paralysis; virus; expression; crop plant.
XX
OS   Androctonus australis.
XX
PN   AU9453967-A.
XX
PD   28-JUL-1994.
XX
PF   24-JAN-1994;   94AU-0053967.
XX
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PR 25-JAN-1993; 93US-0009264.
XX
PA (AMCY) AMERICAN CYANAMID CO.
XX
PI Black BC, Brennan LA, Dierks PM;
XX
DR WPI; 1994-272167/34.
DR P-PSDB; R57967.
XX
PT Codon optimised DNA for Androctonus australis insect toxin - used
PT to transform hosts, partic. insect viruses for use in protecting
PT plants against insects
XX
PS Disclosure; Fig 1; 82pp; English.
XX
CC This sequence is encoded by the codon optimised sequence derived from A.
CC australis and represents the insect toxin (AaIT). The AaIT causes
CC contractile paralysis at the ng to mcg range in insect larvae.
CC Insect viruses contg. the codon optimised AaIT gene may be used to
CC kill insects to reduce damage to crops. The use of the codon
CC optimised sequence enhances expression levels of the AaIT by insect
CC viruses.
XX
SQ Sequence 70 AA;

Query Match 100.0%; Score 53; DB 15; Length 70;
Best Local Similarity 19.0%; Pred. No. 2.2e+02;
Matches 4; Conservative 17; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXXCXXXC 21
|:::|::::::::::::|:::|
Db 22 cnnectkvhyadkgyccllsc 42

RESULT 13
W48669
ID W48669 standard; Protein; 70 AA.
XX
AC W48669;
XX
DT 02-SEP-1998 (first entry)
XX
DE Androctonus australis insect toxin amino acid sequence.
XX
KW Codon optimised; North African scorpion; insect toxin; AaIT;
KW insect cell; expression; plant protection; insect damage;
KW insect virus; nuclear polyhedrosis virus; granulosis virus;
KW non-occluded virus; entomopox virus.
XX
OS Androctonus australis.
XX
PN AU9748372-A.
XX
PD 12-MAR-1998.
XX
PF 15-DEC-1997; 97AU-0048372.
XX
PR 25-JAN-1993; 93US-0009264.
XX
PA (AMCY) AMERICAN CYANAMID CO.
XX
PI Black BC, Brennan LA, Dierks PM;
XX
DR WPI; 1998-241214/22.
DR N-PSDB; V18207, V18208.
XX
PT Isolated, codon optimised nucleic acid sequence encoding Androctonus
PT australis insect toxin - useful for protecting plants from insect
PT damage by delivering insect virus containing it
XX
PS Disclosure; Page 9; 81pp; English.
XX
CC The present sequence represents the wild type sequence of the
CC Androctonus australis (North African scorpion) insect toxin (AaIT).
CC A. australis binds to sodium channels in insects and causes contractile
CC paralysis in insect larvae. Codon usage of the wild type gene (V18208) is
CC optimised for expression in insect cells (see V18207). The sequence is
CC combined with a secretory signal sequence, also optimised for
CC expression in insect cells (see V18209-15). The optimised sequence is
CC useful for producing recombinant AaIT, especially in insect cells, or
CC for protecting plants from insect damage. The toxin gene is delivered
CC by an insect virus, such as nuclear polyhedrosis virus, granulosis
CC virus, non-occluded virus, or entomopox virus.
XX
SQ Sequence 70 AA;

Query Match 100.0%; Score 53; DB 19; Length 70;
Best Local Similarity 19.0%; Pred. No. 2.2e+02;
Matches 4; Conservative 17; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXXCXXXC 21
|:::|::::::::::::|:::|
Db 22 cnnectkvhyadkgyccllsc 42

RESULT 14
R12378
ID R12378 standard; Protein; 71 AA.
XX
AC R12378;
XX
DT 14-AUG-1991 (first entry)
XX
DE AaIT scorpion toxin encoded by oligonucleotides MM62-MM67.
XX
KW Scorpion toxin; AaIT; insect; resistance; plant.
XX
OS Synthetic.
XX
PN EP431829-A.
XX
PD 12-JUN-1991.
XX
PF 28-NOV-1990; 90EP-0312944.
XX
PR 29-NOV-1989; 89US-0443425.
XX
PA (CETU) AGRACETUS INC.
XX
PI Barton KA, Miller MJ;
XX
DR WPI; 1991-173090/24.
DR P-PSDB; R12378.
XX
PT Transgenic plants encoding insect-specific toxins - contain
PT toxins of different specificity that may have additive effects
PT and combat resistance evolution in insects
XX
PS Disclosure; Fig 2; 27pp; English.
XX
CC A artificial toxin coding sequence was derived based on the published
CC amino acid sequence. For each amino acid position a codon was
CC selected representing the most popular codon used in native plant cells.
CC See also Q11971-76.
XX
SQ Sequence 71 AA;

Query Match 100.0%; Score 53; DB 12; Length 71;
Best Local Similarity 19.0%; Pred. No. 2.2e+02;
Matches 4; Conservative 17; Mismatches 0; Indels 0; Gaps 0;

Qy 1 CXXXCXXXXXXXXXXCXXXC 21
|:::|::::::::::::|:::|

```
Db     23 cnnqctkvhyadkgyccllsc 43


RESULT  15
R10870
ID   R10870 standard; Protein; 73 AA.
XX
AC   R10870;
XX
DT   08-MAY-1991  (first entry)
XX
DE   Exon I encoded by genomic meg-CSF clone.
XX
KW   Megakaryocyte colony stimulating factor; platelet deficiency;
KW   bleeding disorder.
XX
OS   Homo sapiens.
XX
PN   WO9102001-A.
XX
PD   21-FEB-1991.
XX
PF   07-AUG-1990;   90WO-US04421.
XX
PR   29-JUN-1990;   90US-0546114.
PR   08-AUG-1989;   89US-0390901.
PR   28-DEC-1989;   89US-0457196.
XX
PA   (GENE-) GENETICS INST INC.
XX
PI   Gesner TG,  Clark SC,  Turner K,  Hewick RM;
XX
DR   WPI; 1991-073490/10.
DR   N-PSDB; Q10580.
XX
PT   New mega:karyocyte colony stimulating factor protein - regulates
PT   human haematopoiesis by stimulating growth and development of
PT   mega:karyocyte(s) in treatment of e.g. plastic anaemia
XX
PS   Claim 3; Page 85; 204pp; English.
XX
CC   The clone was isolated from a human placenta lambda phage DNA
CC   library. The sequence can be inserted into expression vectors for
CC   the prodn. of recombinant meg-CSF.  The protein is used to treat
CC   bleeding disorders and platelet deficiencies.
CC   See also R11372, R10871 and R10872.
XX
SQ   Sequence   73 AA;


  Query Match            100.0%;  Score 53;  DB 12;  Length 73;
  Best Local Similarity   19.0%;  Pred. No. 2.3e+02;
  Matches    4;  Conservative   17;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      1 CXXXCXXXXXXXXXXCXXXC 21
          |:::|:::::::::::|:::|
Db     37 cagrcgegysrdatcncdync 57


Search completed: March  1, 2001, 16:18:28
Job time: 497 sec
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